

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

Information regarding the chemical identity of vinyl chloride is located in Table 3-1. This information includes synonyms, chemical formula and structure, and identification numbers.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of vinyl chloride is located in Table 3-2.

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TABLE 3-1. Chemical Identity of Vinyl Chloride

Characteristic	Information	Reference
Chemical name	Vinyl chloride	HSDB 1996
Synonym(s)	Chloroethene; chloroethylene; 1-chloroethylene; ethylene monochloride; monovinyl chloride; monochloroethene; monochloro- ethylene; MVCs; Trovidur; VC; VCM; vinyl chloride monomer	Fire 1986; HSDB 1996
Registered trade name(s)	No data	
Chemical formula	C_2H_3Cl	HSDB 1996
Chemical structure	$ \begin{array}{ccc} H & & Cl \\ & \backslash & / \\ & C = C \\ & / & \backslash \\ H & & H \end{array} $	
Identification numbers:		
CAS registry	75-01-4	HSDB 1996
NIOSH RTECS	KU9625000	HSDB 1996
EPA hazardous waste	U043	HSDB 1996
OHM/TADS	7216947	HSDB 1996
DOT/UN/NA/IMCO shipping	1086	HSDB 1996
HSDB	169	HSDB 1996
NCI	No data	

CAS = Chemical Abstracts Services; DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; EPA = Environmental Protection Agency; HSDB = Hazardous Substances Data Bank; NCI = National Cancer Institute; NIOSH = National Institute for Occupational Safety and Health; OHM/TADS = Oil and Hazardous Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemical Substances

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TABLE 3-2. Physical and Chemical Identity of Vinyl Chloride

Property	Information	Reference
Molecular weight	62.5	Lewis 1996
Color	Colorless	Budevari 1989
Physical state	Gas	Budevari 1989
Melting point	-153.8°C	Budevari 1989
Boiling point	-13.37°C	Budevari 1989
Density:		
at -14.2°C	0.969 g/cm ³	Cowfer and Magistro 1983
at 15°C	0.9195 g/cm ³	Lewis 1996
at 20°C	0.9106 g/cm ³	NIOSH 1986
Vapor density	2.16	Fire 1986
Odor	Sweet	HSDB 1996
Odor threshold:		
Water	3.4 ppm	Amoore and Hautala 1983
Air	3,000 ppm	Amoore and Hautala 1983
Solubility:		
Water at 25°C	2,763 mg/L	EPA 1985b
	1,100 mg/L	Cowfer and Magistro 1983
Organic solvent(s)	Soluble in hydrocarbons, oil, alcohol, chlorinated solvents, and most common organic liquids	Cowfer and Magistro 1983
Partition coefficients:		
Log K _{ow}	1.36	NIOSH 1986
Log K _{oc}	1.99	Lyman et al. 1982
Vapor pressure:		
at 20°C	2,530 mmHg	Budevari 1989
at 25°C	2,600 mmHg	Lewis 1996
Henry's law constant:		
at 10°C	1.2 (atm·m ³)/mol	EPA 1985b
Autoignition temperature	472°C	Lewis 1996
Flashpoint	-78°C (closed cup)	Budevari 1989
Flammability limits	3.6–33 volume %	NIOSH 1986
Conversion factors		
ppm to mg/m ³ in air	1 ppm = 2.60 mg/m ³	NIOSH 1990
mg/m ³ to ppm in air	1 mg/m ³ = 0.38 ppm	NIOSH 1990
Explosive limits	4–22 volume %	Lewis 1996

